

PHASE I BOOK EXPLOITATION SOV/6156

Cherkasova, L. S., K. V. Fomichenko, T. M. Mironova, F. D. Koldobskaya,  
V. A. Kukushkina, V. G. Remberger

Ioniziruyushcheye izlucheniye i obmen veshchestv (Ionizing Radiation and  
Metabolism). Minsk, Izd-vo AN BSSR, 1962, 152 p. Errata slip inserted.  
2,200 copies printed.

Sponsoring Agency: Akademiya nauk Belorusskoy SSR. Institut fiziologii.

Resp. Ed.: L. S. Cherkasova; Ed. of Publishing House: T. Zaytseva;  
Tech. Ed.: A. Atlas.

PURPOSE: This book is intended for physicians, biologists, biochemists,  
radiologists, and students of medical institutes.

COVERAGE: This monograph summarizes the results of the most recent in-  
vestigations in the field of radiation biochemistry. Attention has been

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Ionizing Radiation and Metabolism

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focused mainly on problems of changes and disturbances in metabolic processes in the central nervous system, the endocrine system, the gastrointestinal tract, and the liver and muscles after irradiation of the animal organism with ionizing radiation.

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CHERKASOVA, L. S. and FOMICHEVA, K. V.

"Effects of Ionizing Radiation on Protein Metabolism in the Central Nervous System and in the Liver"

paper presented at the Symposium on Biological Effects of Ionizing Radiation at the Molecular Level (IAEA), 2-6 July 1962, Trbo, Czech.

ACCESSION NR: AT3013146

S/3018/63/000/000/0581/0588

AUTHOR: Fomichenko, K. V.

TITLE: Protein metabolism radiation damage in the central nervous system

SOURCE: Tret'ya Vsesoyuznaya konferentsiya po biokhimiі nervnoy sistemy\*. Sbornik dokladov. Yerevan, 1963, 581-588

TOPIC TAGS: X-radiation, protein metabolism, radiation damage, central nervous system, protein fraction, RNA, DNA, chronic radiation sickness, protein level change, Mirsky and Pollister's protein fraction method

ABSTRACT: Protein metabolism was studied in the large brain hemispheres, cerebellum, and spinal cord under conditions of chronic radiation sickness to determine biochemical radiation damage in the central nervous system. Mirsky and Pollister's method was used to determine the levels of the following protein fractions: fraction A extracted by 0.14 M NaCl and containing RNA, fraction B extracted by 1 M NaCl and containing DNA, fraction C with proteins soluble in

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1 N NaOH, fraction D (residue of neurokeratine) which is non-alkali soluble and consists of supporting proteins. Experimental adult white rats were X-irradiated with fraction doses under the following conditions: RUM-3 unit, no filter, focal length 4 cm, 21 r/min, single fraction dose 40 r, total dose 760 r. In the first of five experimental series the A, B, C, and D fraction levels were determined in the large brain hemispheres, cerebellum, and spinal cord of normal animals. In the other four series the fractions were studied 15, 30, 60, and 90 days after irradiation. Findings show that fractional X-irradiation doses totaling 760 r cause change in fraction A levels of the large brain hemisphere, cerebellum, and spinal cord. Fraction A level increases by the 15th day after irradiation in the CNS tissue studied and then gradually decreases during the next 30 days; after 60 days it increases again but is not restored to normal by the 90th day. Fraction B level decreases during the first 15 days, then increases gradually, reaches its initial value by the 60th day, and then decreases slightly again. Fraction C practically does not change in the early periods after irradiation, only on the 90th day it increases markedly. Fraction D level does not change during the first 60 days after irradiation, but by the 90th day it decreases

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significantly in the brain tissue. X-irradiation produces different changes in the protein fractions, but all the changes are characterized by phases, torpidity, and prolonged course. Metabolic reactions of the large brain hemispheres, cerebellum, and spinal cord to ionizing radiation do not differ sharply, but only in degree of expression. Radiosensitivity of the CNS is confirmed again by protein fraction changes under conditions of chronic radiation sickness. Orig. art. has: 4 figures.

ASSOCIATION: Laboratoriya biokhimii Instituta fiziologii Akademii nauk BSSR, Minsk (Biochemistry Laboratory of the Physiology Institute of the Academy of Sciences BSSR)

SUBMITTED: 00

DATE ACQ: 28Oct63

ENCL: 00

SUB CODE: AM

NO REF SOV: 026

OTHER: 004

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FOMICHENKO, K.V.; DIS'KO, N.A.

Proteinogram of the blood serum following chronic X-ray irradiation. Dokl. AN BSSR 9 no.3:199-201 Mr '65.

(MIRA 18:6)

1. Laboratoriya biokhimii Instituta fiziologii AN BSSR i Belorusskiy gosudarstvennyy universitet imeni Lenina.

L 29835-66 EWT(■) (3)

ACC NR: AP6012873

SOURCE CODE: UR/0205/56/006/002/0179/0184

AUTHOR: Cherkasova, L. S.; Koldobskaya, F. D.; Kukushkina, V. A.; Mironova, T. M.;  
Remberger, V. G.; Tayts, M. Yu.; Fomichenko, K. V.

ORG: Institute of Physiology, AN BSSR, Minsk (Institut fiziologii AN BSSR) 29  
37

TITLE: Effect of neutron irradiation on tissue metabolism processes 19 B

SOURCE: Radiobiologiya, v. 6, no. 2, 1966, 179-184

TOPIC TAGS: neutron irradiation, radiation biologic effect, tissue physiology, ~~animal~~  
~~experiment~~ BIOLOGIC METABOLISM

ABSTRACT: In order to clarify the effect of neutron bombardment on carbohydrate, energy, and protein metabolism at relatively low doses, the changes in free and bound glycogen, glucose-1-phosphate, glucose-6-phosphate, fructose-1, 6-diphosphate, triose-phosphate, phosphopyruvate, ATP, creatine phosphate, phosphorylase, amylase, succinic dehydrogenase, respiratory quotient, and protein content were determined in the central nervous system, skeletal muscle, and liver of adult white rats 15 - 30 days after total body irradiation with neutrons having energies of 0.04 - 1.35 Mev (total dose of about 13 rad in 60 min).

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UDC: 577.291:539.125.6



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ACC NR: AP6012873

While the glycogen content of the brain increased temporarily at 15 days and then decreased progressively, that of muscle decreased only at 15 days. The synthesis of bound glycogen was definitely inhibited 30 days after irradiation, and disruption of the coordination of glycogen metabolism was shown by the phosphorylase and amylase values. There were no significant changes in the phosphorylated intermediates of carbohydrate metabolism, but the reactions from glucose-6-phosphate through fructose-1, 6-diphosphate to triose-phosphate seemed to be inhibited in the brain, while that from glucose-1-phosphate to glucose-6-phosphate was accelerated in skeletal muscle. The levels of ATP and creatine phosphate were unchanged in the brain and somewhat increased in muscle. Although the changes in succinic dehydrogenase and  $QO_2$  were insignificant, there was some increase in protein synthesis 30 days after irradiation. The neutron flux was measured by L. N. Uspenskiy and I. V. Filyushin. Orig. art. has: 5 figures and 5 tables. [08]

SUB CODE: 06 / SUBM DATE: 14Nov64 / ORIG REF: 005 / OTH REF: 004

ATD PRESS: 5013

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FOMICHENKO, N.; KONISHCHEV, I.

Ammonia vapor condenser. Mias. ind. SSSR 32 no.4:40 '61.

(MIRA 14:9)

1. Rostovskiy-na-Donu myasokombinat.  
(Condensers (Vapors and gases))

FOMICHENKO, S. I.

28(1)125(1) PHASE I BOOK EXPLOITATION 506/2531

Mechanizatsiya i avtomatizatsiya trudoyskikh protsessov v litennoy proizvodstve (Mechanization and Automation of Labor-consuming Processes in Foundry Practice) Moscow: Mashgis, 1959. 226 p. Errata slip inserted. 4,000 copies printed.

Reviewer: K. M. Shobnikov, Candidate of Technical Sciences; Ed. (Title page); G. I. Koblyanskiy (Deceased); Ed. (Inside back); M. M. Sokolov, Candidate of Technical Sciences; Tech. Ed. O. V. Spasenskaya; Managing Ed. for Literature on the Technology of Machinery Manufacture (Leningrad Division, Mashgis); Ya. P. Kuznetsov, Engineer.

PURPOSE: The book is intended for technical personnel in foundries and engineers engaged in the mechanization and automation of industrial processes. It may also be used by students of institutions of higher technical education.

CONTENTS: The book deals with recent achievements in the mechanization and automation of time-and labor-consuming operations in foundries. Specific instances of mechanization and automation of casting processes are described. The material presented in this book is divided into six parts, dealing with the following subjects: molding materials, mold and coremaking, casting, equipment of molds, finishing of castings, and special casting methods. Each part consists of a number of technical papers presented by several authors. The application of mechanization ranges from the preparation of molds and cores to the mechanization and streamlining of specialized casting methods. There are numerous diagrams showing automated installations in use. Some of the methods described appear to be in the experimental stage at that plant. The technical papers published in this book were originally presented at a technical conference of the Soviet machine industry in October 1957. No personalities are mentioned.

Zagory, B. P. Constructions of New Molding Machines 66

Pisov, I. I. Installation for Modifying Cast Iron With Magnesium Under Pressure 113

Perlov, Ya. A. Redesign of Control Mechanisms for Electric Arc Furnaces 118

Volyanskiy, V. M. Hydroblast Installation for Cleaning Castings 134

Zaslavskiy, M. Ya. Hydroblast Cleaning of Castings 162

Shchegolev, A. D. Overall Mechanization of Steel-casting Cleaning Shop 167

Dolzhik, Z. A. Mechanization and Automation of Investment Casting 176

Belousov, M. M. Recent Non-Soviet Achievements in the Automation and Mechanization of Die Casting 186

Lopyrev, I. I., M. P. Borovskiy, G. P. Nikitin, A. L. Zayatskiy, and V. A. Zayatskiy. Mechanization of the Production of Shell High-precision Castings in Pressed Bakelite-base Shell Molds 202

Ginzburg, A. D. Semiautomatic Machine for Making Shell Molds 210

GANZHA, G., inzh.; FOMICHEV, A., agronom

New reapers for harvesting grain in separate stages. Tekh.  
v sel'khoz. 20 no. 8:73-75 J1 '60. (MIRA 13:9)  
(Grain--Harvesting)

FOMICHEV, A., agronom; SHABRANSKIY, V., inzh.

Using combines with a pick-up attachment for harvesting seed plants  
of sugar beets. Tekh.v sel'khoz. 21 no.8:34-35 Ag '61. (MIRA 14:7)

1. Ukrainskaya mashinoppytatel'naya stantsiya.  
(Sugar beets—Harvesting)

88098  
S/107/60/000/011/002/010  
E073/E335

9.7000

AUTHORS: Kupriyanov, G. and Fomichev, A.

TITLE: Machines Which Control and Read

PERIODICAL: Radio, 1960, No. 11, pp. 6 - 8

TEXT: Series manufacture of universal digital computers type "Урал-2" (Ural-2) has begun. This machine is capable of carrying out 5 000 to 6 000 operations per sec. It can be used for solving the various engineering and scientific problems, e.g. for calculating the flight trajectory of a rocket to the Moon, the strength of components of complicated shape, etc. Recently, such a computer was used for planning the organisation of the transportation of sand from 8 piers to Moscow construction sites. The task of the machine was to select the shortest routes. Very considerable savings were obtained. The use of a computer for automatically controlling the movement of electric and diesel trains is mentioned, stating that design work has been started on such automatic-control systems. Mathematical analogues are used for simulating natural

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E073/E335

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test conditions. Thus, for instance, autopilots can be tested by means of stationary analogue equipment which simulates the movements of the aircraft and takes into consideration external influences. The disturbing effects which bring about a deviation in the course of the aircraft from the predetermined course are fed into the computer as a voltage. As a result of this disturbance, the computer output will supply a signal, a voltage  $\varphi$  which corresponds to the deviation of the aircraft from the predetermined course. This voltage acts on a dynamic platform onto which the autopilot is mounted. The inclination angle of the platform determines the magnitude of the signal  $\delta$  of the autopilot which acts on the rudder of the aircraft. An electric signal that is proportional to the deflection angle of the ailerons is fed to a second input of the computer. As soon as the "aircraft" is on course again the deviation from the predetermined direction decreases, reducing also the angle of inclination of the test platform and consequently

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the magnitude of the signal of the autopilot is also reduced. This process is continued until the control action of the autopilot has fully compensated the deviation caused by the disturbing effects. Various small computers are being manufactured in the Soviet Union from equipment for solving differential equations up to the sixth order to large models capable of solving equations up to an order of 32. Computers are extensively used for research purposes, for instance, analogue equipment MH-7 (MN-7) and MH-8 (MN-8) is series-manufactured and extensively used for investigating automatic-control systems, the dynamics of which can be described by ordinary differential equations of up to the sixth order. Recently, analogue computers built with semiconductor have appeared on the market; for instance, the computer MH-10 (MN-10) is suitable for solving equations up to the sixth order. They are built up of germanium junction triodes and diodes and have a power

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Machines Which Control and Read

consumption of only 130 W. An example of larger analogue equipment is type МПТ-9 (MPT-9) for solving linear differential equations up to the sixteenth order and МНБ-1 (MNB-1) equipment for solving nonlinear equations up to the twelfth order. An interesting machine is the ВПРР-2 (VPRR-2) for choosing optimum machining conditions on machine tools. Data are fed in on the power of the machine tool, depth of cut, material of the blank, tool geometry, etc. The entire calculation takes 2-3 minutes. The machine solves equations which interrelate the parameters of the basic types of machining (milling, turning, drilling) and determines the speed of machining, the feed, the machining time, the power of the spindle and other factors. This problem is solved by means of a simple compensation circuit made up of individual resistors. Data are introduced by means of turning handles of potentiometers. One of the Soviet electronic plants is



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mass-producing such equipment. Another computer, the network electronic integrator, ЭВМ-С (EKS), is intended for selecting the optimum distribution of oilwells and for selecting the best spot for driving in water under pressure. This machine contains 20 000 components. The Tbilisskiy nauchno-issledovatel'skiy institut sredstv avtomatizatsii (Tbilisi Scientific Research Institute of Means of Automation) has developed a number of special-purpose computers, for instance, one is intended for controlling the feeding of hot air into tea-drying equipment. Information on the humidity of the tea leaf, the temperature of the heated and of the exhaust air, are fed into the computer. Application such a computer has increased the productivity of the tea-processing plant by 20% and has completely eliminated the necessity for scrapping any tea. Very much simplified sketches are included, showing: the analogue for testing an automatic pilot; the machine EI-S

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for selecting the optimum distribution of oilwells and  
the machine for controlling operating conditions in a  
tea-drying plant. There are 3 figures.

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L 2962-66 FSS-2/ENT(1)/FS(v)-3/EWA(d)

TT/GS/GM

ACCESSION NR: AT5023566

UR/0000/65/000/000/0065/0077

AUTHOR: Lebedinskiy, A. I.; Glovatskiy, D. N.; Tulupov, V. I.; Khlopov, B. V.;  
Fomichev, A. A.; Shuster, G. I.

TITLE: Infrared spectrophotometry of the Earth's thermal radiation

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 65-77

TOPIC TAGS: spectrophotometer, IR spectrum, instrumentation satellite, thermal radiation, atmospheric radiation, radiation intensity, radiation spectrometer/Cosmos 45 satellite

ABSTRACT: Results and equipment used in an experimental study of the energy distribution of the Earth's thermal radiation are reported. A diffraction scanning spectrophotometer, mounted on Cosmos-45, comprised the basic equipment. The spectrophotometer was designed to measure thermal radiation in two bands, 7-20  $\mu$  and 14-38  $\mu$ . The spectral resolution for the first band ranged from 1.4  $\mu$  for the 7- $\mu$  wavelength to 1.1  $\mu$  for the 18- $\mu$  wavelength. For the second band, the range was from 2.8  $\mu$  for

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the 14- $\mu$  wavelength to 2.1  $\mu$  for the 36- $\mu$  wavelength. The instantaneous field of vision of the optical system was 1°46' x 2°20', encompassing a radiating-surface area of 7.5 x 10 km at the average altitude of 250 km. The instrument was capable of field of vision scanning within  $\pm 8^\circ 30'$ . Spectral intensity measurements were carried out at  $\lambda = 9.5 \pm 0.6 \mu$  for the first band and  $\lambda = 18.5 \pm 1.35 \mu$  for the second. Semiconductor bolometers with a sensitive area of 1 mm<sup>2</sup> were employed as radiation sensors. Radiation detected by the bolometers was converted into electrical signals with a frequency of 27 cps. The signals were amplified and converted into d-c voltages proportional to the radiation flux. To measure cloud cover below the satellite, a photometer operating at 6000-8000 Å with a resolution of about 30 km was used. From the data obtained during the flight of Cosmos 45, the following conclusions concerning the intensity of the Earth's thermal radiation were drawn: 1) The intensity at the minimum of the absorption band near 15  $\mu$  is almost constant. 2) A close correlation between the intensities at the other wavelengths was noted. This provides evidence that the effective radiation levels differ but slightly for various regions of the spectrum within 8-35  $\mu$ . 3) The lower layers of the troposphere are the basic source of the thermal radiation leaving the Earth's atmosphere. 4) There is a strong variable intensity of the ozone band with its center at 9.6  $\mu$ . Orig. art. has: 14 figures.

[CS]

ASSOCIATION: none

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ACCESSION NR: AT5023566

SUBMITTED: 02Sep65

ENCL: 00

SUB CODE: ES, SV

NO REF SOV: 004

OTHER: 007

ATD PRESS: 4109

BVK

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GVOZDEV, V.D.; SAL'NIKOV, A.A.; FOMICHEV, A.G.; TIKHONOV, V.A.; VASIL'YEV, A.S.

Design and construction of apparatus with a fluidized bed of grainy material. Part 1: Gas distribution grids. Izv.vys.ucheb.zav.;khim. i khim.tekh. 6 no.2:320-327 '63. (MIRA 16:9)

1. Ivanovskiy khimiko-tekhnologicheskii institut, kafedra khimicheskogo mashinostroyeniya.

(Fluidization)

FOMICHEV, A.G.; GVOZDEV, V.D.

Process of mixing granular materials in an apparatus of continuous operation with a fluidized bed. Izv.vys.ucheb.zav.;khim. i khim. tekhn. 7 no. 1:141-147 '64. (MIRA 17:5)

1. Ivanovskiy khimiko-tekhnologicheskoy institut, kafedra khimicheskogo mashinostroyeniya.



GRECHUSHNIKOV, Nikolay Ivanovich; KHRISTYUKHIN, V.V., otvetstvennyy red.;  
FOMICHEV, A.G., red.; SHISHKOVA, L.M., tekhn. red.

[Joinery on ships] Sudovye stoliarnye raboty. Leningrad, Gos.  
soiuznoe izd-vo sudostroitel. promyshl., 1958. 231 p. (MIRA 11:8)  
(Joinery) (Shipbuilding)

PALLER, Abram Mikhaylovich, SOKOLOV, Vladimir Fedorovich,; RIMMER, A.I.,  
otv. red.; FOMICHEV, A.G., red.; SHISHKOVA, L.M., tekhn. red.

[Tightness testing of steel ship hulls] Ispytaniia korpusov  
stal'nykh sudov na neproniatsaemost'. Leningrad, Gos. soiuznnoe  
izd-vo sudostroitel. promyshl., 1958. 100 p. (MIRA 11:11)  
(Ships, Iron and steel)

PEVZNER, Boris Moiseyevich; LOMAKIN, A.A., prof., doktor tekhn.nauk, red.;  
SELIVANOV, K.I., kand.tekhn.nauk, retsenzent; FOMICHEV, A.G., red.;  
KONTOROVICH, A.I., tekhn.red.; FRUMKIN, P.S., tekhn.red.

[Centrifugal and axial marine pumps] Sudovye tsentrobezhnye i  
osevye nasosy. Pod red. A.A. Lomakina: Leningrad, Gos. soizuznoe  
izd-vo sudostroitel.promyshl., 1958. 319 p. (MIRA 12:2)  
(Pumping machinery)

ZHILINSKIY, Kazimir Yanovich; RAUSH, O.I., otv. red.; ~~POMICHEV~~, A.G., red.;  
KONTOROVICH, A.I., tekhn.red.

[Heat insulation of ship hulls] Teploizolatsiia korpusa sudna.  
Leningrad, Gos. soiuзное izd-vo sudostroit. promyshl., 1958.  
230 p. (MIRA 12:1)  
(Hulls (Naval architecture)) (Insulation (Heat))

FAVOROV, Boris Pavlovich; KHRISTYUKHIN, V.V., otv.red.; FOMICHEV,  
A.G., red.; TSAL, R.K., tekhn.red.

[Decking] Palubnye pokrytiia. Leningrad, Gos.soiuznoe  
izd-vo sudostroitel'.promyshl., 1959. 96 p. (MIRA 12:9)  
(Ships)

LOGINOV, Sergey Petrovich; KORYAKIN, S.F., otv.red.; FOMICHEV, A.G.,  
red.; KONTOROVICH, A.I., tekhn.red. ~~XXXXXXXXXX~~

[World wide shipbuilding and composition of the merchant  
marine fleet; statistical index] Mirovye sudostroenie i sostav  
torgovogo flota; statisticheskii sbornik. Leningrad, Gos.  
soiuznoe izd-vo sudostroit.promyshl., 1959. 75 p. (MIRA 12:9)  
(Merchant marine)

SEROVA, Irina Aleksandrovna; SLUCHEVSKIY, Vladimir Stepanovich; STRELETS,  
Porfiry Luk'yanovich; ISUPOV, V.A., otv.red.; FOMICHEV, A.G., red.;  
LEVOCHKINA, L.I., tekhn.red.

[Manufacture of ceramic piezoelements; technological principles]  
Proizvodstvo keramicheskikh p'ezoelementov; osnovy tekhnologii.  
Leningrad, Gos.soiuznoe izd-vo sudostroit.promyshl., 1959. 98 p.  
(MIRA 13:1)

(Piezoelectric substances)

KOKICHEV, Valentin Nikolayevich; PAZYUK, Ye.I., nauchnyy red.; FOMICHEV,  
A.G., red.; KONTOROVICH, A.I., tekhn.red.

[Gear-finishing machines; manual] Zubootdelochnye stanki;  
spravochnoe posobie. Leningrad, Gos.soiuznoe izd-vo sudostroit.  
promyshl., 1960. 242 p. (MIRA 13:6)  
(Gear-cutting machines)



SHEYNBUK, Shneyer Yevseyevich; KHVASTUNOV, N.G., nauchnyy red.;  
FOMICHEV, A.G., red.; SHISHKOVA, L.M., tekhn.red.

[Gas cutter] Rabochii-gazoreschik. Leningrad, Gos.soiuznoe  
izd-vo sudostroitel.promyshl., 1960. 151 p. (MIRA 13:7)  
(Gas welding and cutting)

STRUMPE, P.I., kand.tekhn.nauk; SYROMYATNIKOV, V.F., kand.tekhn.nauk;  
nauchnyy red.; YAKUSHENKOV, A.A., kand.tekhn.nauk, nauchnyy red.;  
FOMICHEV, A.G., spetsred.; KOTLYAKOVA, O.I., tekhn.red.

[Over-all automatic control on seagoing ships] Kompleksnaya  
avtomatizatsiya morskikh sudov. Pod obshchei red. P.I.Strumpe.  
Leningrad, Izd-vo "Morskoi flot," 1960. 178 p.

(MIRA 14:4)

1. Russia (1923- U.S.S.R.) Ministerstvo morskogo flota.
2. Tsentral'nyy nauchno-issledovatel'skiy institut morskogo flota.  
(for Strumpe, Syromyatnikov, Yakushankov).  
(Ship handling) (Automatic control)

ALEKSEYEV, Aleksey Mikhaylovich; SOKOLOV, German Mikhaylovich; FRID,  
Ye.G., nauchnyy red.; FOMICHEV, A.G., red.; KONFOROVICH, A.I.,  
tekhn.red.

[Transportation equipment of shipyards] Transportnoe oborudo-  
vanie verfel. Leningrad, Gos.soiuznoe izd-vo sudostro-  
promyahl., 1960. 179 p. (MIRA 14:4)

(Shipyards--Equipment and supplies)  
(Conveying machinery)

TANKHEL'SON, Grigoriy Vul'fovich; ZAGORSKAYA, Yelena Petrovna; BILYANSKIY,  
Milya Khaimovich; KOZAN, N.D., nauchnyy red.; POMICHEV, A.G.,  
red.; KRASOVA, N.V., tekhn.red.

[Reinforced concrete floating docks] Zhelezobetonnye plavuchie  
doki. Leningrad, Gos.soiuznoe izd-vo sudostroit.promyshl., 1960.  
195 p. (MIRA 14:4)

(Dry docks)

MESHCHERYAKOV, Vasilii Vasil'yevich; DORMIDONTOV, V.K., nauchnyy red.;  
FOMICHEV, A.G., red.; TSAL, R.K., tekhn.red.

[Hull fitting shops of a shipbuilding enterprise] Korpusnye  
tsakhi sudostroitel'nykh predpriyatii. Leningrad, Gos.soiuznoe  
izd-vo sudostroitel'.promyahl., 1960. 259 p. (MIRA 13:6)  
(Hulls (Naval architecture)) (Shipfitting)

YAKOVLEV, Yuriy Sergeyevich; FOMIN, P.F., inzh.-vitse-admiral,  
retsenzent; CHUVIKOVSKIY, V.S., kand. tekhn. nauk, retsenzent;  
PATRASHEV, A.N., doktor tekhn. nauk, prof., zasl. deyatel'  
nauki i tekhniki RSFSR, nauchnyy red.; FOMICHEV, A.G., red.;  
KOROVENKO, Yu.N., tekhn. red.

[Hydrodynamics of explosions] Gidrodinamika vzryva. Leningrad,  
Sudpromgiz, 1961. 312 p. (MIRA 15:4)  
(Shock waves) (Explosions)

SOKOLIK, Anatoliy Ioniasovich; CHARNETSKIY, Konstantin Konstantinovich;  
POMICHEV, Aleksey Georgiyevich; LYUSTIBERG, V.F., inzh., ved.  
red.; YAKOVLEV, D.A., inzh., med.; SOROKINA, T.M., tekhn.red.

[High-voltage OK-19M oscillograph system] Vysokovol'tnaia os-  
tsillograficheskaya ustanovka OK-19M. Moskva, Filial Vses. in-  
ta nauchn.i tekhn.informatsii, 1958. 15 p. (Peredovoi nauchno-  
tekhnicheskii i proizvodstvennyi opyt. Tema 35. No.P-58-25/2)  
(MIRA 16:3)

(Cathode ray oscillograph)

STREL'TSOV, V.V.; POLYANIN, V.G.; FOMICHEV, A.G.; KOMKOV, R.N.

Kinetics of mixing of free-flowing materials in industrial  
mixers. Khim. prom. 40 no.11:824-828 N '64 (MIRA 18:2)



FOMICHEV, A.I., inzh.; VEKSLER, Yu.A., inzh.

Controlling the heaving of ground in drift mining by means of  
blasting using camouflet charges. Shakht. stroi. 5 no.9:  
26-29 S '61. (MIRA 16:7)

1. Shakhta No.31-bis tresta Stalinugol' Karagandinskogo ugol'nogo  
kombinata.  
(Mining engineering) (Blasting)

MEL'NIKOV, S.M.; FOMICHEV, A.I.; PANKRATOV, V.N.; POLYANSKIY, P.T.

Mining 58,200 tons of coal in 31 workdays with the "Donbass-2k" ~~outer~~-loader. Ugol' 40 no.8:75-76 Ag '65.

(MIRA 18:8)

1. Glavnyy inzh tresta Oktyabr'ugol' (for Mel'nikov).
2. Shakhta No.33/34 tresta Oktyabr'ugol' kombinata Karagandaugol' (for Fomichev, Pankratov, Polyanskiy).

DZHIMBIN, S.M.; FOMICHEV, A.K., ~~ekonomist~~; REUT, A.I., ekonomist, red.

[The Kalmyk A.S.S.R.; essay on its economic geography]  
Kalmytskaia ASSR; ekonomiko-geograficheskii ocherk. Elista,  
Kalmytskoe knizhnoe izd-vo, 1960. 144 p. (MIRA 17:1)

FOMICHEV, Aleksandr Mikhaylovich, redaktor zavodskoy gazety; ALEKSEYEVA,  
18., red.; VORONTSOVA, Z., tekhn.red.

[Steelworkers are building houses] Metallurgi stroiat doma.  
Izhevsk, Udmurtakoe knishnoe izd-vo, 1958. 29 p. (MIRA 12:5)

1. Izhevskiy metallurgicheskiy zavod (for Fomichev).  
(Izhevsk--Apartment houses)

FOMICHEV, A. M.

Harvesting sugar-beet seed plants in separate stages. Sakh.prom.  
34 no.7:55-57 J1 '60. (MIRA 13:7)

1. Ukraineskaya mashinoispytatel'naya stantsiya.  
(Sugar beets--Harvesting)

FOMICHEV, A.N.

Fagot method of sawing logs. Rats.1 izobr.predl.v stroi. no.50:  
3 '53.

(MIRA 7:2)

(Sawmills)

MALAKHOVA, Ye.I., kand. veter. nauk; NAUMYCHEVA, M.I., kand. veter.  
nauk; FEDOTOVA, M.N., veter. vrach; POMICHEV, A.S., veter. vrach

Piperazine for preimaginal deworming in swine ascaridosis.  
Veterinariia 39 no.10:45-46 O '62. (MIRA 16:6)

1. Vsesoyuznyy institut gel'mintologii imeni akademika K.I.  
Skryabina.

(Piperazine)  
(Ascarids and ascariasis)  
(Parasites—Swine)

FOMICHEV, A. V.

USSR/Metals - Castings, Methods

Feb 52

"Obtaining the Thread and Clear Ribs in Permanent Mold Casting," A.V. Fomichev, Engr

"Litey Proizvod" No 2, pp 27, 28

Describes 2 methods for obtaining silumin castings of clear shape which require very little or no machining. Liquid metal is poured without pressure, which is applied after filling out mold during solidification. Second method provides for increased pressure by a sprue built up high over a mold. Discusses design changes in a mold for better gas elimination from its threaded portions.

207T93



FOMTCHEV, A. V.

Founding

Fluid stamping in undivided matrix. Lit. proizv. No. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

18(5)

AUTHOR:

Fomichev, A.V., Engineer

SOV/128-59-8-6/29

TITLE:

Stamping of Liquid Metal in One-Piece Die

PERIODICAL:

Liteynoye proizvodstvo. 1959, Nr 8, pp 13 - 14 (USSR)

ABSTRACT:

The technological stamping process of liquid metals in one-piece die consists of four steps. At first, the free flooding of a liquid metal in metal form takes place. Secondly, the liquid metal is stamped. Further, the stamped component is extracted from the mould and the puncheon. The author gives a short description of a stamping machine which fulfils all the above mentioned steps, so that the production process of the stamped components can be automated (Fig 2,3 and 5). The stamping machine is mounted on a 60 tons friction press. Some specimens of components from ~~Alumin~~ alloy SIL-1 which are stamped by this machine are presented (Fig 1 and 4). There are 3 diagrams, 2 photographs and 3 Soviet references.

Card 1/1

FOMICHEV, A. V., and TAREYEV, B. A.,

"Geostrophic currents in the Antarctic sector of the Pacific."

To be submitted for the 10 th Pacific Science Congress, Honolulu, 21 Aug - 6 Sep 1961.

Institute of Oceanology.

FOMICHEV, A.V.

Structural characteristics of water masses of the Peru Current.  
Trudy Inst.ocean. 40:83-92 '60. (MIRA 14:8)  
(Peru Current)

FOMICHEV, A.V.

Following the initiative of the workers of Novochoerkassk Electric  
Locomotive Plant. Mashinostroitel' no.8:39-41 Ag '64.

(MIRA 17:10)

FOMICHEV, A.V.

Eastern part of the Indian Ocean. Mor. sbor. 48 no. 12:56-61  
D '64. (MIRA 18:2)

FOMICHEV, A.V.

water masses and vertical structure of Antarctic waters.  
Trudy VNIRO 57:53-77 '65.

Using maritime meteorological observations for the indirect  
study of currents. Ibid.:103-112 (MIRA 18.6)

SOFCIOV, N.M.; NAKHAPETIAN, L.A.; POMICHYV, A.V.; LIVSHITS, S.Ya.;  
CHIRTSOV, V.I.; KASIMOV, P.G.; LUKINA, M.Yu.; ZHAVORONKOV, N.M.

Experimental industrial production of pharmacopoeial cyclopropane.  
Khim. prom. 42 no.9:662-663 S '65. (MIRA 18:9)



(A) L 12140-66 EWT(m) RM

ACC NR: AP6000455

SOURCE CODE: UR/0064/65/000/009/0022/0023

AUTHOR: Sokolov, N. M.; Nakhapetyan, L. A.; Fomichev, A. V.; Livshits, S. Ya.;  
Chirtsov, V. I.; Kasimov, R. G.; Lukina, M. Yu.; Zhavoronkov, N. M.

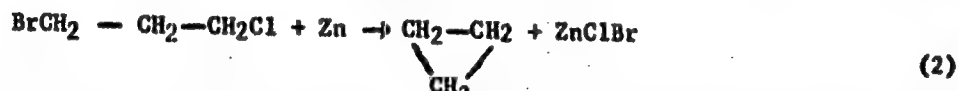
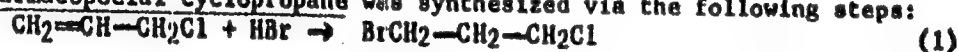
ORG: None

TITLE: Experimental industrial preparation of pharmacopoeial cyclopropane

SOURCE: Khimicheskaya promyshlennost', no. 9, 1965, 22-23

TOPIC TAGS: cyclopropane, organic synthetic process, cyclic group, pharmaceutical, propane

ABSTRACT: Pharmacopoeial cyclopropane was synthesized via the following steps:



In the third step, propylene and other impurities are removed by distillation in a packed tower. The operation of the experimental industrial assembly used in this process is described and its diagram is given. The reactor for the synthesis of cyclopropane is also illustrated. The propylene content of cyclopropane was

Card 1/2

UDC: 661.715.4:547.512

L 12140-66  
ACC NR: AP6000455

determined by gas-liquid chromatography with a thermal conductivity detector, and the cyclopropane obtained was found to meet the specified requirements. The study permitted the refinement of certain parameters of the process by which cyclopropane is produced at the various stages, and improved the flowsheet of the synthesis considerably. Orig. art. has: 3 figures.

SUB CODE: 07 / SUBM DATE: 00 / ORIG REF: 005

HW  
Card 2/2

ACC NRI AP6035726

(A)

SOURCE CODE: UR/0413/66/000/019/0086/0086-2

INVENTOR: Kasimov, R. G.; Kirichenko, I. D.; Livshits, S. Ya.; Mezheritskiy, A. M.;  
Pomichev, A. V.; Chirtsov, V. I.; Yudin, S. M.

ORG: none

TITLE: Method of extracting mercury from tailings. Class 40, No. 186706

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 86

TOPIC TAGS: mercury, mining engineering, metal extracting, *electrolysis*

ABSTRACT: To raise the yield and sanitary work conditions for mercury extraction by nitric acid and electrolysis, the electrolysis is carried out in a solution containing 230—260 gram/liter of mercury and 20—40 gram/liter of nitric acid and using a nonsoluble anode and a mercuric cathode; the anode and cathode current densities are 300—450 and 450—600 amp/m<sup>2</sup>, respectively. [WA-96]

SUB CODE: 08,11,16/SUBM DATE: 30Dec64/

Card 1/1

UDC: 669.791.3:541.135.21

FOMICHEV, N.V.; TARABASOV, N.D., doktor tekhn. nauk prof., red.

[Collection of problems on the course "The strength of materials"] Sbornik zadach po kursu "Soprotivlenie materialov. Moskva, Vses. zaochnyi energ. in-t. Pt. 3. 1963. 160 p.  
(MIRA 19:1)

FOMICHEV, A.Ye., kapitan 1-go ranga v otstavke

Flag officer I.K.Kozhanov. Mor. sbor. 47 no.6:18-23 Je '64. (MIRA 18:7)

FOMICHEV, B., dotsent, kand.tekhn.nauk

High-pressure water boiler for central boiler room. Zhil.-  
kom.khoz. 9 no.7:8-10 '59. (MIRA 12:11)  
(Boilers)

*Fomichev, B. I.*

1957-11/10

AUTHORS: *Fomichev, B. I. and Fomichev, B. I.*

TITLE: The Effect of the Method of Treatment of the Photocathode on the Sensitivity of a Photon Counter (*liychnye metoda obnabotki fotoizotoda na chuvstvitel'nost' schetchnika sveta*)

JOURNAL: *Fizika i tekhnika laserov*, 1957, no. 1, pp. 106-107 (1957)

ABSTRACT: The photon counter is the most sensitive instrument for measuring weak ultraviolet intensities. However, in many cases one has to use this counter to measure intensities which lie near the lower limit of its sensitivity. In such cases it is necessary to increase the sensitivity still further. The problem is difficult because, on account of the discharge conditions in which the counter works, one cannot use highly sensitive complex cathodes because they would disintegrate under bombardment by positive ions. It was pointed out in (ref.1) that Pb and Al counters prepared by the evaporation of the cathode layer in an atmosphere of hydrogen are more sensitive than those prepared in a vacuum. The aim of the present work was to increase the

Page 1/2

The Effect of the Method of Treatment of the Photocathode on the Sensitivity of a Photon Counter.

sensitivity of a photon counter by means of a special treatment of the cathode. Fig.1 shows two experimental curves of the spectral sensitivity as a function of wave length for different cathodes. It is clear from this figure that the evaporation in a hydrogen atmosphere leads to an increase in the photo sensitivity by a factor of 5-7 at  $\lambda 2500 \text{ \AA}$ . At the same time there is no appreciable shift at the red end of the curve. This means that the reason for the increased sensitivity is not adsorption of electropositive H-atoms but a change in the absorption characteristics of the metallic layer. The other curves shown in Fig.1 are for cathodes evaporated in a vacuum. They all give lower sensitivities. S.P. Rodionov participated in this work. There are 1 diagram, no tables and 3 references, of which 2 are Russian and 1 English.

ASSOCIATION: Leningrad State University, Inst. A.A.Zhdanov.  
(Leningradskiy gosudarstvennyy universitet in A.A.Zhdanova)

SUBMITTED: September 28, 1956.

AVAILABLE: Library of Congress.

Class 2/1

1. Photon counter-Sensitivity



Ponomarev, B. I. (Grad 54)

Dissertation: "Questions of Heat Supply for Small Villages in the Vicinity of Large Hydroelectric Plants." Cand Tech Sci, Moscow. Order of the Labor Red Banner Construction Engineering Institute imeni V. V. Kuibyshev, 28 Jun 54. (Vostochnaya Moskva, Moscow, 13 Jun 54)

DO: 304 318, 23 Dec 1954.

[11]  
FOMICHEV, B., kandidat tekhnicheskikh nauk.

New heating system for low buildings in small towns. Zhil.-khoz.  
khoz. 4 no.8:10-12 '54. (MIRA 8:3)  
(Hot-water heating)

[1]  
FOMICHEV, B., kandidat tekhnicheskikh nauk

Heating system with water distribution manifold for multistory  
buildings. Zhil.-kom.khoz.5 no.5:12-14 '55. (MLRA 8:11)  
(Heating from central stations)

FOMICHEV, B.I.

Operating characteristics of boilers produced by the All-Union Scientific Research Institute for Sanitary Engineering Equipment-M (oh) in individual heating systems for buildings of few stories. Ved.i san.tekh. no.5:4-8 My '56. (MIRA 9:9)  
(Boilers)

FOMICHEV, Boris Ivanovich, dots., kand. tekhn. nauk; BOGUSLAVSKIY, L.D.,  
red.; ZAMYSHLYAYEVA, I.M., red. izd-va; LELYUKHIN, A.A., tekhn.  
red.

[Heating systems with water distribution through large conduits]  
Sistemy otopleniia s kollektornym raspredeleniem body. Moskva,  
Izd-vo M-va kommun. khoz. RSFSR, 1961. 77 p. (MIRA 15:1)  
(Hot-water heating)

FOMICHEV, B. I.

Operation of boilers on a water heating system. Vod. i san. tekhn.  
no.9:18-21 S '61. (MIRA 14:11)

(Boilers) (Hot-water heating)

FOMICHEV, B.I., kand. tekhn. nauk

From work practices with steam boilers on a water heating  
regime. Vod. i san. tekhn. no.11:34-37 N.'63.

(MIRA 17:1)

FOMICH V, F.K., inzh.

Analytic evaluation of the engineering efficiency of the production  
of metal structures. Vest. mashinostr. 45 no.4:55-60 Ap '65.  
(MIRA 18:5)



~~FOMICHEV, G.~~

Stope hopper. Mast. ugl. 7 no.1:24 Ja '58.

(MIRA 12:2)

1. Nachal'nik Korkinskoy normativno-issledovatel'skoy stantsii.  
(Coal-handling machinery)

FOMICHEV, G., inzh.; SOKOLAN, T., inzh.

Five times faster. Mast. ugl. 8 no.5:13 My '59.

(Mine haulage) (Coal mines and mining)

(MIRA 12:8)

YEREMAKOV, V.S.; KLOCHKOV, I.M.; CHIZHOV, D.G.; KOGTEV, G.I.; LAVRENE-  
KO, K.D.; NEKRASOV, A.M.; SPIRIN, S.A.; VESELOV, N.D.; KOTILEVSKIY, D.G.;  
SMIRNOV, G.V.; MARINOV, A.M.; MAKSIMOV, A.A.; IVANOV, M.I.; NEMOV, A.P.;  
CHUPRAKOV, N.M.; AVTONOMOV, B.V.; SYROMYATNIKOV, I.A.; MOLOKANOV, S.I.;  
FAERMAN, S.TS.; GORSHKOV, A.S.; GOL'DENBERG, P.S.; SOKOLOV, B.M.; MA-  
KUSHKIN, Ya.G.; MKHITARYAN, S.G.; RASSADNIKOV, Ye.I.; GRUDINSKIY, P.G.;  
FOMICHEV, G.I.; SHCHERBININ, B.V.; ZAYTSEV, V.I.; KOKOREV, S.V.; KLYU-  
SHIN, M.P.; PESCHANSKIY, V.I.; SAFRAZBEKYAN, G.S.; i dr...

IUrii Prokhorovich Komissarov; obituary. Elek.sta. 25 no.5:60 My '54.  
(Komissarov, IUrii Prokhorovich, 1910-1954) (MLRA 7:6)

CHIZHOV, D.G.; KOTEV, G.I.; LAVREHENKO, K.D.; SPIRIN, S.A.; NEKRASOV, A.M.; IVANOV, M.I.; UFAYEV, M.Ya.; GRISHIN, I.K.; KOSTIN, M.F.; POPOV, V.A.; ZAGORODNIKOV, P.I.; PEDOTOV, P.N.; KAZ'MIN, A.V.; FOMICHEV, G.I.; YERSHOV, P.I.; MESHCHERYAKOV, V.I.; YEFREMOV, S.G.; LEVIN, I.S.; ISTUCHEV, L.I.; KOKOREV, S.V.

Nikolai Alekseevich Andreev. Energetik 4 no.9:40 S '56. (MLRA 9:10)  
(Andreev, Nikolai Alekseevich, 1896-1956)

BARANOV, Boris Mikhaylovich; POKLAD, Petr Grigor'yevich; SMIRNOV, Leonid Petrovich; POMICHEV, Grigoriy Ivanovich; FRIDKIN, Iosif Aronovich; FAYERMAN, A.L., red.; BORUNOV, N.I., tekhn.red.

[Construction and use of cable lines] Sooruzhenie i ekspluatatsiia kabel'nykh lini. Moskva, Gos.energ.isd-vo, 1959. 542 p.

(MIRA 13:3)

(Electric cables)

VOLCHKOV, Konstantin Konstantinovich; GRISHIN, Boris Yakovlevich; ZARKHIN, Mikhail Mikhailovich; NANN, A.K., kand.tekhn.nauk, retsenzent; BARANOV, B.M., inzh., retsenzent; POKLAD, P.G., inzh., retsenzent; SMIRNOV, L.P., inzh., retsenzent; POMICHEV, G.I., inzh., retsenzent; FRIDKIN, I.A., inzh., retsenzent; SHECHEGLOV, A.P., inzh., red.; ZHITNIKOVA, O.S., tekhn.red.

[Line structures of municipal electric networks] Eksploatatsiia setevykh soorushenii gorodskoi elektricheskoi seti. Pod red. A.P. Shcheglova. Moskva, Gos.energ.izd-vo, 1960. 394 p.

(MIRA 13:5)

1. Moskovskaya kabel'naya set' (for Baranov, Poklad, Smirnov, Pomichev, Fridkin).

(Electric power distribution)

BARANOV, Boris Mikhaylovich; POKLAD, Petr Grigor'yeovich;  
SMIRNOV, Leonid Petrovich; FOMICHEV, G.I.; FRIDKIN,  
I.A.; FEDOSENKO, R.Ya., nauchn. red.; SHUMILOVA, Ye.M.,  
red.

[Construction and operation of municipal cable networks]  
Sooruzhenie i ekspluatatsiia gorodskikh kabel'nykh setei.  
Moskva, Vysshaya shkola, 1965. 321 p. (MIRA 18:7)

POMICHEV, G.T., inzh.

Arrangement of automatic switching of stand-by power and automatic  
reclosing for the transformers of a remotely controlled substation.

Elek sta. 30 no.2:84-86 F '59. (MIRA 12:3)  
(Electric transformers) (Electric switchgear)



FOMICHEV, I.

More attention to the mobilization of internal resources. Fin. SSSR  
17 no.10:63-64 0 '56. (MIRA 9:11)  
(Finance)

FOMICHEV, I.A., kand.tekhn.nauk; OSTRENKO, V.Ya., kand.tekhn.nauk

Metal pressure on rolls in large diameter pipe rolling on automatic mills. Obr.met.davl. no.2:155-170 '53. (MIRA 12:10)

1. Nauchno-issledovatel'skiy trubnyy institut.  
(Rolling mills)

POMICHEV, I.A., kand.tekhn.nauk, laureat Stalinskoy premii

Grooving rolls and mandrels for piercing mills. Obr.met.davl.  
no.3:232-253 154. (MIRA 12:10)

(Rolling mills)

OSTRENKO, V.Ya.; FOMICHEV, I.A., redaktor.

[Skilled worker in the drill and casing pipe section; textbook for practical and technical courses and schools for skilled workers] Master otdela buril'nykh i obsadnykh trub; uchebnik dlia proizvodstvenno-tekhn.kursov i shkol masterov. Khar'kov, Gos. nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953. 179 p. (MLRA 7:3)

(Petroleum--Well boring) (Boring machinery)

FOMICHEV, Ignat Antonovich.

Sci Res Tube Inst. Academic degree of Doctor of Technical Sciences, based on his defense, 11 November 1954, in the Council of Inst of Metallurgy imeni Baykov, Acad Sci USSR, of his dissertation entitled: "Oblique Rolling."

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no. 11, 14 May 55, Byulleten' MVO SSSR, No. 15, Aug 56, Moscow, pp. 5-24, Uncl. JPRS/NY-537

✓ 14264\* New Method of Testing the Plastic Properties of  
Metals at High Temperatures. Novyi metod ispytaniia plas-  
ticheskikh svoistv metallov pri vysokikh temperaturakh. MG

(Russian.) I. A. Fomichev. Zavodskaya Laboratoriya, v. 21, no.  
7, July 1955, p. 844-844.

Tests to establish optimum temperature conditions for helical  
rolling (rotary piercing) of seamless steel tubing. Diagrams,  
graphs, photographs.

of per

137-58-4-7207

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 127 (USSR)

AUTHORS: Fomichev, I. A., Vdovin, F. V., Kravchenko, A. G., Pishchik, N. S.

TITLE: Manufacture of Tubes From Austenitic lKh14N14V2M (EI-257) Steel [ Proizvodstvo trub iz austenitnoy stali lKh14N14V2M (EI-257) ]

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. n.-i. trubnyy in-t, 1957, Nr 3, pp 5-16

ABSTRACT: Tubes of lKh14N14V2M are designed for use for re-heaters and manifolds of boilers operating under high and superhigh steam parameters. This steel (S) is a S of the austenitic class and is highly heat-resistant. The effects of temperature and degree of reduction on the plasticity of the S were investigated, and experiments were conducted in rolling the tubes on an automatic 400 mill. Forged hollow and solid blanks with machined surfaces were employed. Plasticity was determined by torsion testing, by testing for pierceability, and for tension in a single plane (this last method was employed for the first time and makes it possible to determine the relationship between the temperature and plasticity, under

Card 1/2

137-58-4-7207

Manufacture of Tubes From Austenitic 1Kh14N14V2M (EI-257) Steel

conditions of stress similar to those of the real stresses existing during piercing, and, consequently, the optimum temperature for the working of the S). The design of the apparatus for testing for plane tension is appended and described. An analysis of the results of the torsion, plane tension, piercing, and micro-structure tests is presented. This shows that piercing of the blank should best be performed in the 1200-1225°C temperature interval. The results of tests for pierceability and high-temperature torsion show that as the length of time the metal is held for purposes of heating increases, the plasticity of the S drops. After obtaining the results of laboratory investigation, rolling of tubes of 219x27 mm dimensions was performed successfully both from hollow and from solid blanks. Solid blanks are recommended as being economically advantageous.

I. M.

1. Steel tubes--Manufacture    2. Steel tubes--Material

Card 2/2



137-58-4-7208

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 127 (USSR)

AUTHORS: Fomichev, I. A., Ostrenko, R. Ya., Rozenfel'd, I. B., Bobrakov, L. D.

TITLE: The Technical Foundations of the Production of 529 mm Tube on the 400 Mill of the Transcaucasian Plant (Tekhnologicheskiye osnovy proizvodstva trub diam. 529 mm na stane "400" Zakavkazskogo zavoda)

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. trubnyy in-t, 1957, Nr 3, pp 17-25

ABSTRACT: The possibility of producing 529 mm diameter tubing (T), needed for gas and oil pipelines, on a 400 mill is established. Preliminary experiments with T of smaller size (325 and 273 mm diameter) showed that the amount of increase in diameter in the expansion of sleeves in two piercing mills may be as much as 40 percent and made it possible to carry out the necessary reconstruction of the plant equipment in order to develop a plan for a rolling schedule for making T of 529 mm diameter from 350 mm blanks. The rolling table envisages the production of 420 mm sleeves from the Nr 1 piercing mill and 520 mm diameter sleeves from the Nr 2.

Card 1/2

137-58-4-7208

The Technical Foundations of the Production of 529 mm Tube (cont.)

The following changes were made in the grooving of the piercing mill rolls: the entry taper was increased from  $3^{\circ}30'$  to  $4^{\circ}$ , and the exit taper from  $4^{\circ}$  to  $9^{\circ}$ . Rolls of minimum diameter were used to reduce loading. The diameter of the pass when rolling in an automatic mill was 51 mm. The diameter of the T past the reeling mill was 540-550 mm, and this assured the required reduction in diameter in the sizing mill. The profile of the rolls of the reeling mill was changed so that the entry taper was  $2^{\circ}30'$ . The sizing mill was arranged for work with various stands. The diameter of the pass in the fourth stand was 534 mm. Technical and power calculations are presented, and these are to be used in organization of manufacture.

I. M.

1. Steel tubing--Manufacture
2. Piercing mills--Equipment

Card 2/2

*Fomichev, I.A.*  
FOMICHEV, I.A.; OSTRENKO, V.Ya.; BOBRIKOV, L.D.; MINDLIN, I.G.

Hollow mandrels with inside cooling for piercing mills. Biul.  
TSNIICHM no.23:42-44 '57. (MIRA 11:2)

1.VNITI (for Fomichev, Ostrenko, Bobrikov). 2.Zakavkazskiy  
metallurgicheskiy zavod (for Mindlin).  
(Rolling mills)

SOV/137-58-10-20922

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 79 (USSR)

AUTHOR: Fomichev, I.A.

TITLE: Conditions of Stress in Helical Rolling (Napryazhennoye sostoyaniye pri kosoy prokatke)

PERIODICAL: V sb.; Prokatn. i trubn. proiz-vo. Moscow, Metallurgizdat, 1958, pp 176-206

ABSTRACT: Central failure of a billet being subjected to helical rolling (HR) occurs under the influence of normal stresses. The deformation occurring in HR is axially asymmetrical and non-uniform. A description of stress patterns is adduced without quantitative determination of the stresses, also experimental proofs of these patterns. The resultant data confirm the hypothesis of uneven plastic deformation in HR as the major cause of tensile stresses leading to destruction of the core of the billet. The author believes the concept that an omnidirectional pattern of tensile stresses occurs in HR under the effect of external compressive forces to be unrealistic. The appearance of annular failures is interpreted with the idea that a special pattern of stressed states has appeared. Annular failures

Card 1/2

SOV/137-58-10-20922

Conditions of Stress in Helical Rolling

appear when the tensile stress from the rolls is partially or completely paralyzed by the effect of compressive stresses from the tip of the mandrel, but in the heart of the billet only. At the same time, there is a point at some distance from the center of the billet where the stresses due to the rolls remain quite large, exceeding the rupture strength of the material being rolled.

B.Ts.

- |                         |                               |                         |           |
|-------------------------|-------------------------------|-------------------------|-----------|
| 1. Metals---Processing  | 2. Metals--Stresses           | 3. Metals---Deformation | 4. Metals |
| --Mechanical properties | 5. Rolling mills--Performance |                         |           |

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SOV/122-59-6-8/27

AUTHORS: Fomichev, I.A., Doctor of Technical Sciences and  
Ostrenko, V.Ya., Candidate of Technical Sciences

TITLE: Investigation of the Operation of Piercing Mills With  
Barrel-, Mushroom- and Disc-type Rolls

PERIODICAL: Vestnik mashinostroyeniya, 1959, Nr 6, pp 28-31 (USSR)

ABSTRACT: Mushroom- and disc-type rolls in piercing mills have  
overhung roll mountings. Barrel-type rolls have gained  
favour in Russian tube mills for larger sizes and alloy-  
steel tubes. It is stated that each of the three types  
of roll has its appropriate field and none should be  
excluded in new mills. Analytical and experimental  
investigations are described, performed on barrel-type  
and disc rolls at the Yuzhnotrubby zavod (Yuzhotrubnyy  
Works) and on mushroom-type rolls at the Chelyabinskiy  
trubopерокатный завод (Chelyabinsk Tube-Rolling Works)  
stated that all three types of rolls produce the same  
initial deformation and, in all cases, the piercing process  
requires a helicoidal motion of the billet. Analysis  
shows how to determine the piercing axis of each type  
of mill and its position is found for each of the three

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cases. On the basis of theoretical analysis, a number of curves are derived (Figure 2), which illustrate the variation of the resultant velocity, the rate of feed and the velocity of rotation along the initial deformation zone for all three types of piercing mill. The distribution of velocities is examined for each type of roll and it is found that the substantial drawback of the disc-type rolls is the change of relative velocity between the two discs across their face. However, the benefit lies in an improved tube surface. The best velocity distribution is that of the mushroom rolls where a progressive increase of the total velocity and its components occurs from the entry to the outlet. The study of the process of twisting the billet and experiments carried out have established that, in the process of traversing the initial deformation zone, the billet, in a barrel-type roll mill is subject to alternating twisting in two opposed directions. A twist takes place in the entry cone in the direction of rotation,

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followed by untwisting completed at the throat and by twisting in the opposite direction. In the mushroom-type mill, the twist usually occurs in the direction of rotation, both in the entry and the outlet cones. This produces the least stressed metal in the finished product. Measured output rates at the two tube works mentioned above are summarised in Table 1. A 90 mm diameter billet was pierced to produce finished tube of 89 mm outside diameter and 3.5 mm wall thickness. The lower output of the mushroom-type mill as measured was due to obsolete design. Assuming equal rate of feed (0.9 m/sec) it is concluded that barrel-type rolls will have a piercing cycle of 6.5 sec, disc-type rolls of 5.5 sec and mushroom-type rolls of 5.2 sec. Table 2 summarises the scrap percentages in

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' Mushroom- and Disc-type Rolls

different tube mills. Mushroom-type roll mills have the least scrap due to external or internal folds, presumably as a result of the more favourable distribution of velocities. There are 4 figures and 2 tables.

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SOV/136-59-6-14/24  
AUTHORS: ~~Fomichev, I.A.~~, Doctor of Technical Sciences,  
Say, N.F., Rummyantsev, B.F., Engineers  
TITLE: Tube-rolling of Aluminium Alloys in Tube-rolling Plants  
(Prokatka trub iz alyuminiyevykh splavov na trub-  
oprokatnykh ustanovkakh)  
PERIODICAL: Tsvetnyye metally, 1959, Nr 6, pp 75 - 79 (USSR)  
ABSTRACT: Experiments on hot rolling of alloys AMTs, AV, D1, D16 and  
V95 have been carried out at the Dnepropetrovsk Rolling  
Mill imeni Lenin. Alloys D1, D16 were homogenised at  
490  $\pm$  10 °C and V95 at 470  $\pm$  10 °C for 12 hours to  
remove the brittle intermetallic phase in the grain  
boundaries. Plasticity of the alloys was measured in the  
range 300 - 460 °C. Figure 1 shows the influence of test  
temperature on plasticity, alloys AV, V95, D1 and D16  
increasing in plasticity and AMTs decreasing in plasticity  
with increase in temperature. Figure 2 shows the stress  
to fracture against test temperature, D16 and D1 having  
the highest resistance to deformation and AV the lowest.  
Plasticity was also checked on a laboratory piercing mill.  
At 8, 10 and 12% reduction, fracture of the core was not  
observed on any samples of the alloys except V95 at 12%.

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Tube-rolling of Aluminium Alloys in Tube-rolling Plants

With 15% reduction, they all fractured except alloy D1. From the results the optimum temperatures for hot rolling were estimated as AMTs 390-420, AV 400-430, D1 350-380, D16 370-400 and V95 360-390 °C; and the reduction was not to exceed 10-12%. Finally, experiments under production conditions were carried out. The chemical compositions of the alloys are given in the table. It was shown that it was possible to obtain thin-walled tubes from thick-walled hollow specimens by hot-rolling on a high-production tube-rolling plant without any difficulty in all the alloys tested. Tubes can be produced from solid specimens of alloy AMTs by an operation on a piercing mill followed by a roll on a continuous mill. If it is proved economically more efficient to produce tubes in the other alloys by this method than by extrusion, special precautions must be taken to eliminate adherence of the metal to the plant. The load on the motors of the mills is 10-30% lower for rolling aluminium than for carbon steels. There are 2 figures, 1 table and 2 Soviet references.

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S/137/61/000/005/018/060  
A006/A106

AUTHORS: Fomichev, I.A., Ostrenko, V.Ya.

TITLE: Energy consumption during piercing

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 5, 1961, 25-26, abstract  
5D244 (Bvii. nauchno-tekhn. inform. Ukr. n.-i. trubn. in-t, 1959,  
no. 8, 7 - 10)

TEXT: An investigation was made of different types of piercing mills with barrel-shaped, disk-shaped and fungiform rolls. In all cases 90 mm diameter blanks were pierced into sleeves of equal dimensions for 89 x 3.5 mm pipes, at an equal number of revolutions of the rolls and close values of the inclination angles (in disk mills - a corresponding value of eccentricity). Maximum loads on the mill and the specific energy consumption occur on mills with barrel-shaped rolls; least loads on mills with fungiform rolls. This mill assures also the production of pipes without external and internal skins, which is another advantage as compared to other mills. ✓

Yu.M.

[Abstracter's note: Complete translation]

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